

Atty. Ref.: 9319S-000711

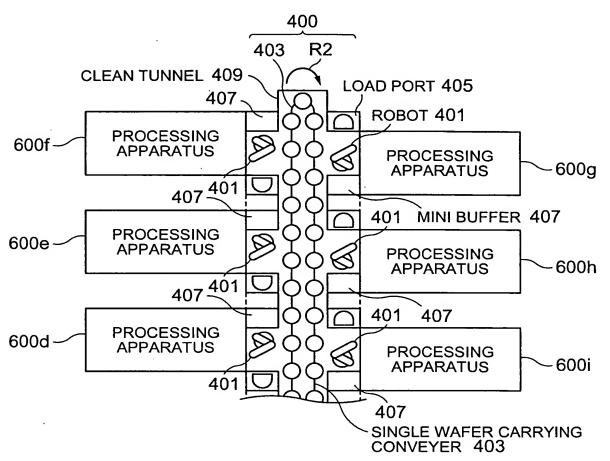


FIG. 2A

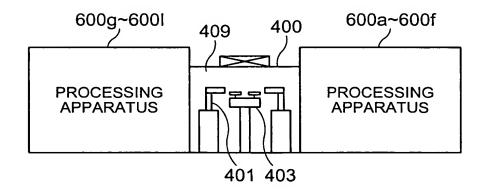


FIG. 2B

Title: MANUFACTURING APPARATUS, AND MANUFACTURING METHOD

Inventors: Shuji TANAKA et al. Atty. Ref.: 9319S-000711

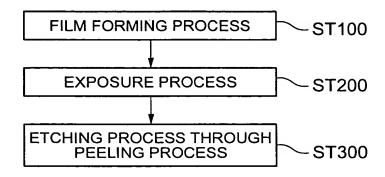
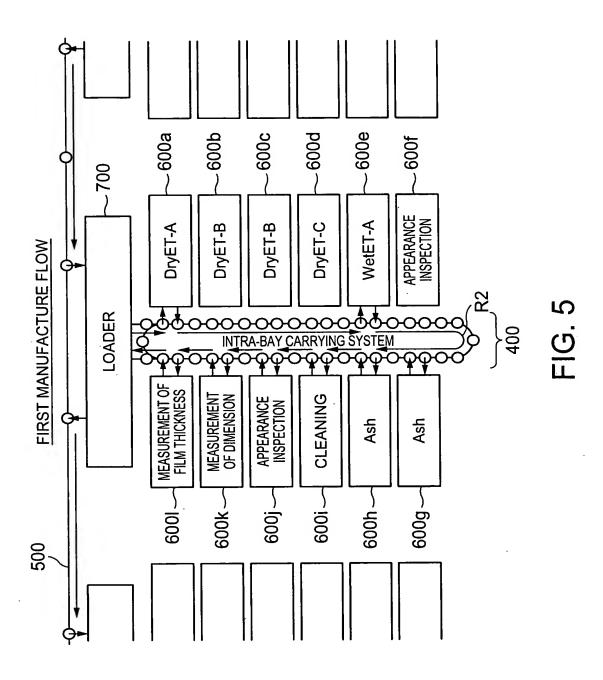


FIG. 3

WetET-A	1
DryET-A	1
DryET-B	2
DryET-C	1
Ash	2
CLEANING	1
APPEARANCE INSPECTION	2
MEASUREMENT OF DIMENSION	1
MEASUREMENT OF FILM THICKNESS	1

FIG. 4



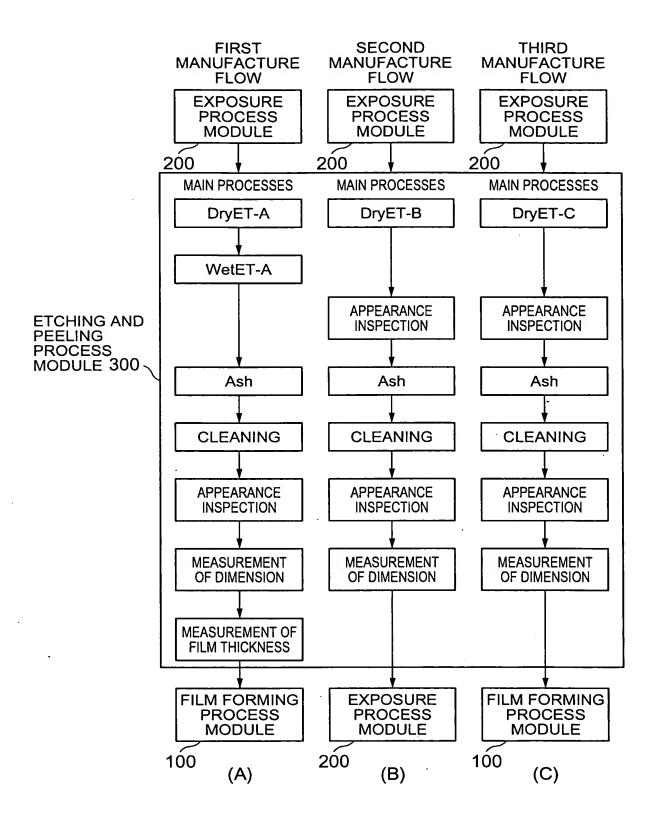
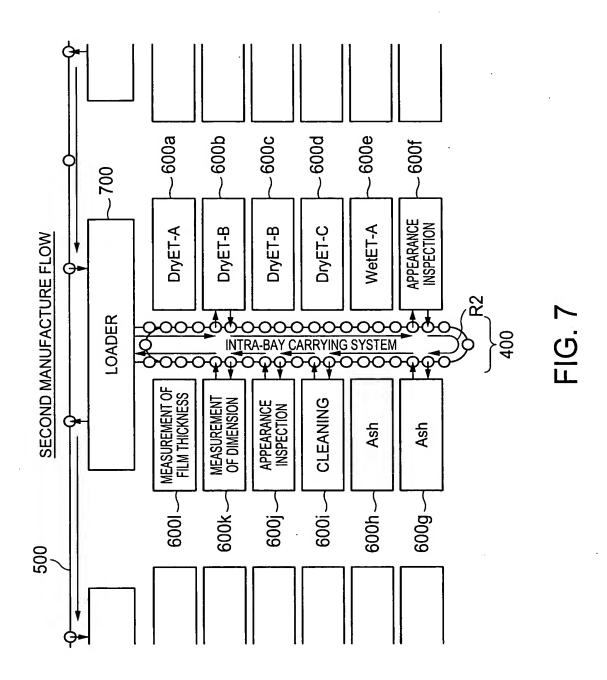
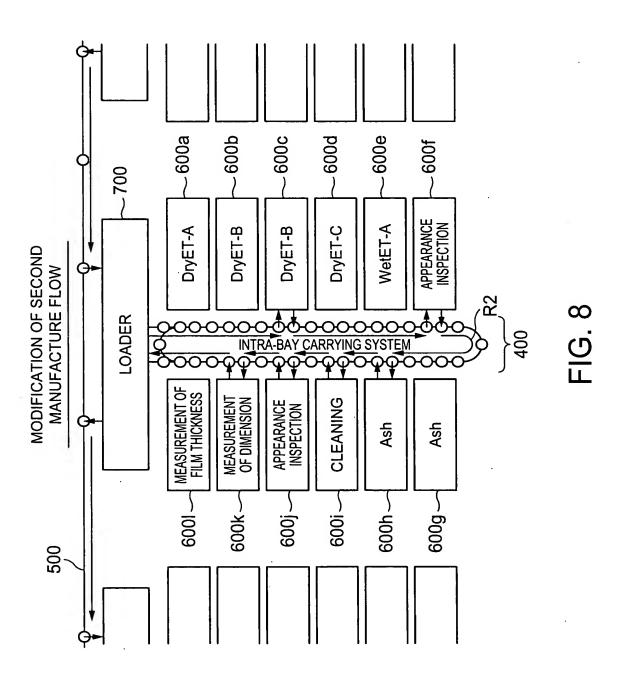
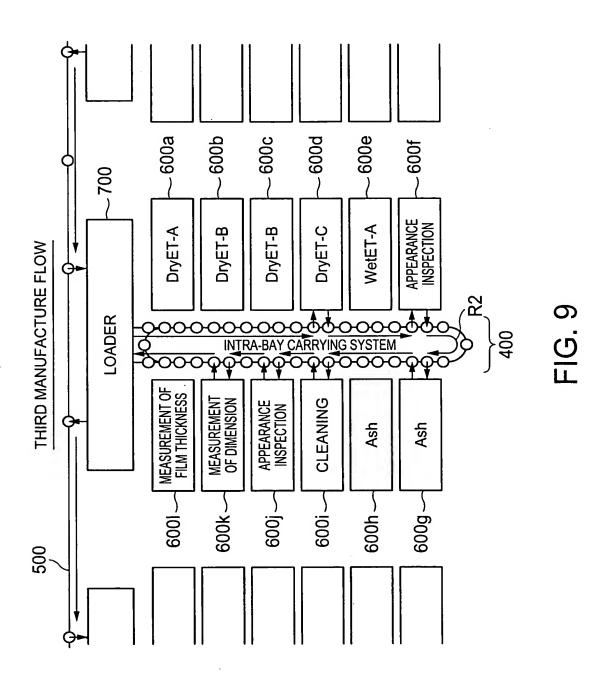


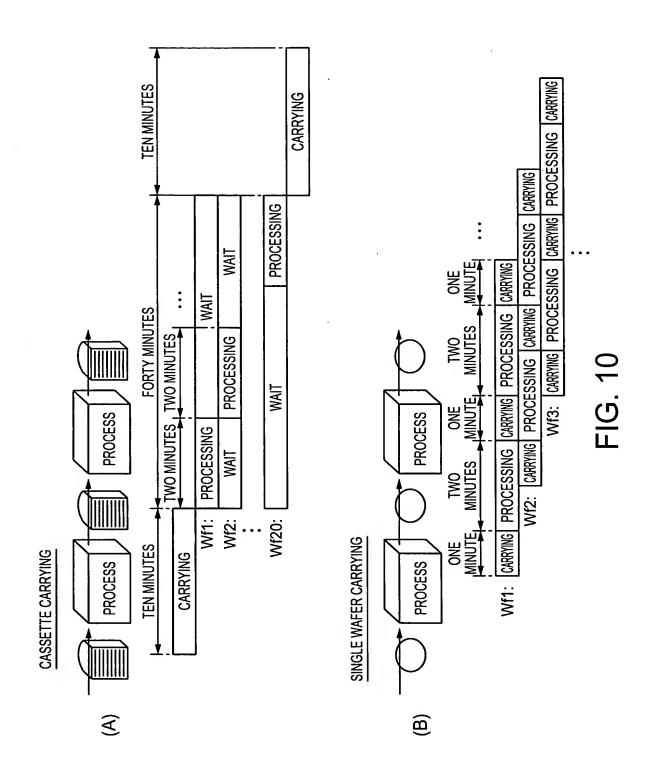
FIG. 6



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Title: MANUFACTURING APPARATUS, AND MANUFACTURING METHOD Inventors: Shuji TANAKA et al.
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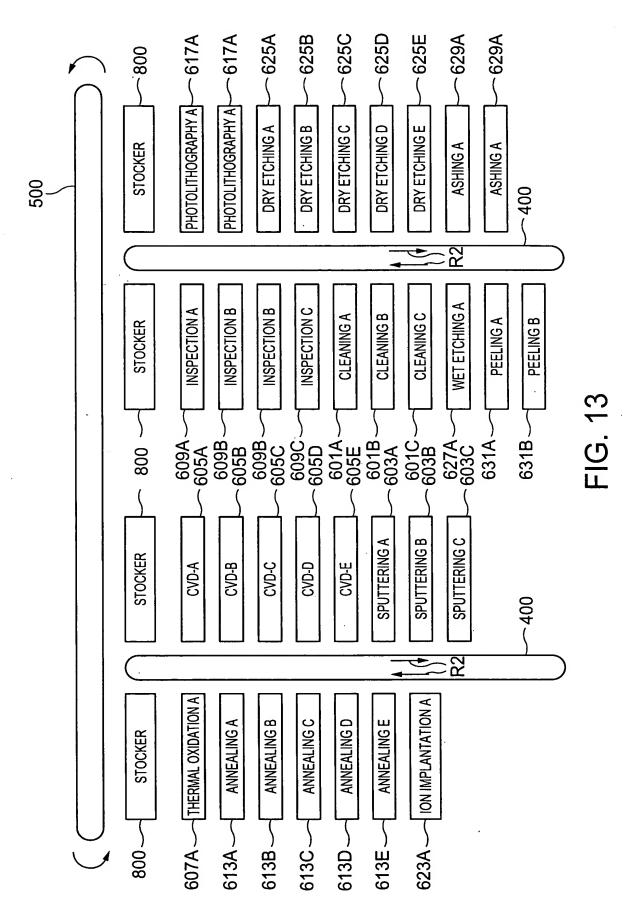
=	- 1		-				7		1		7	5 1	- 1		-	- -	-	-	-	-	-
INSPECTION PROCESS	INSPECTION B		INSPECTION B				INSPECTION B				INSPECTION B	INSPECTION B	INSPECTION B		INSPECTION B	INSPECTION B	INSPECTION B	INSPECTION B	INSPECTION B	INSPECTION B	PEELING INSPECTION B B
ASHING PEELING PROCESS	PEELING A		PEELING A		PEELING		PEELING A	PEELING	PEELING A	PEELING A	PEELING	PEELING A	PEELING A		PEELING A	PEELING A	PEELING A	PEELING B	PEELING A		
ASHING PROCESS	ASHING A		ASHING A		ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A		ASHING A	ASHING A	ASHING A		ASHING A	ASHING A	ASHING A
ETCHING PROCESS I											WET ASHING A					WET ETCHING A	WET ASHING A		WET ASHING A		WET ETCHING A ASHING A
ETCHING PROCESS	DRY ETCHING A		DRY ETCHING B				DRY ETCHING B	,			DRY ETCHING C	DRY ETCHING B	DRY ETCHING C		DRY ETCHING A	DRY ETCHING C	DRY ETCHING C	DRY ETCHING D	DRY ETCHING C	DRY ETCHING E	
					INSPECTION ION IMPLANTATION C	INSPECTION ION IMPLANTATION C A		INSPECTION ION IMPLANTATION C A	INSPECTION ION IMPLANTATION C A	ION IMPLANTATION A											
INSPECTION PROCESS	INSPECTION C		INSPECTION		INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C		INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C
INSPECTION PROCESS	INSPECTION B		INSPECTION B				INSPECTION B			INSPECTION B	INSPECTION B	INSPECTION B	INSPECTION INSPECTION B C		INSPECTION B	INSPECTION B	INSPECTION B	INSPECTION B	INSPECTION B	INSPECTION B	
CLEANING PHOTOLITHOGRAPHY INSPECTION INSPECTION ION IMPLANTATION PROCESS PROCESS PROCESS	PHOTOLITHOGRAPHY INSPECTION INSPECTION A B C		PHOTOLITHOGRAPHY INSPECTION A B		PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY A	ANNEALING CLEANING PHOTOLITHOGRAPHY INSPECTION INSPECTION D A B C	PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY INSPECTION INSPECTION ION IMPLANTATION A B C C	PHOTOLITHOGRAPHY INSPECTION INSPECTION A B C	PHOTOLITHOGRAPHY INSPECTION INSPECTION A B C	PHOTOLITHOGRAPHY A		PHOTOLITHOGRAPHY INSPECTION INSPECTION A B C	ING ANNEALING CLEANING PHOTOLITHOGRAPHY INSPECTION INSPECTION C	PHOTOLITHOGRAPHY INSPECTION INSPECTION A B C	РНОТОLITНОGRAРНҮ А			
CLEANING		CLEANING	CLEANING				CLEANING	- -				CLEANING		_					CLEANING		_
ANNEALING		ANNEALING A	ANNEALING (ANNEALING C		ANNEALING D					ANNEALING D		ANNEALING CLEANING D A		ANNEALING A			ANNEALING E		
CLEANING	CLEANING B	CLEANING	CLEANING												CLEANING				CLEANING	CLEANING	
INSPECTION PROCESS		INSPECTION CLEANING ANNEALING CLEANING A B A C C		INSPECTION A							INSPECTION A										
FILM FORMING INSPECTION CLEANING PROCESS	SPUTTERING A	CVD-A	CVD-B	THERMAL OXIDATION A	cvp-c		СУВО				CVD-A	CVD-D	CVD-C	G-QAD-D	SPUTTERING A	CVD-E		SPUTTERING B	CVD-E	SPUTTERING C	
CLEANING	CLEANING A			CLEANING A			CLEANING A				CLEANING	CLEANING A	CLEANING			CLEANING					
LAYER	-	2	67	4	'n	٥	7	∞	6	9	=	12	55	4	55	16	11	∞=	5	8	21

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PROCESS NO.	LAYER	APPARATUS	PROCESS NO.	LAYER	APPARATUS	PROCESS NO.	LAYER	APPARATUS
1	1	CLEANING A	55	8	ASHING A	109	15	PEELING A
2	1	SPUTTERING A	56	8	PEELING A	110	15	INSPECTION B
3	1	CLEANING B	57	9	PHOTOLITHOGRAPHY A	111	16	CLEANING A
4	1	PHOTOLITHOGRAPHY A	58	9	INSPECTION C	112	16	CVD-E
5	1	INSPECTION B	59	9	ION IMPLANTATION A	113	16	ANNEALING A
6	1	INSPECTION C	60	9	ASHING A	114	16	PHOTOLITHOGRAPHY A
7	1	DRY ETCHING A	61	9	PEELING A	115	16	INSPECTION B
8	1	ASHING A	62	10	PHOTOLITHOGRAPHY A	116	16	INSPECTION C
9	1	PEELING A	63	10	INSPECTION B	117	16	DRY ETCHING C
10	1	INSPECTION B	64	10	INSPECTION C	118	16	WET ETCHING A
11	2	CVD-A	- 65	10	ION IMPLANTATION A	119	16	ASHING A
12	2	INSPECTION A	66	10	ASHING A	120	16	PEELING A
13	2	CLEANING B	. 67	10	PEELING A	121	16	INSPECTION B
14	2	ANNEALING A	68	11	CLEANING A	122	17	PHOTOLITHOGRAPHY A
15	2	CLEANING C	69	11	CVD-A	123	17	INSPECTION B
16	3	CVD-B	70	11	INSPECTION A	124	17	INSPECTION C
17	3	CLEANING B	71	11	PHOTOLITHOGRAPHY A	125	17	DRY ETCHING C
18	3	ANNEALING B	72	11	INSPECTION B	126	17	WET ETCHING A
19	3	CLEANING C	73	11	INSPECTION C	127	17	ASHING A
20	3	PHOTOLITHOGRAPHY A	74	11	DRY ETCHING C	128	17	PEELING A
21	3	INSPECTION B	75	11	WET ETCHING A	129	17	INSPECTION B
22	3	INSPECTION C	76	11	ASHING A	130	18	SPUTTERING B
23	3	DRY ETCHING B	77	11	PEELING A	131	18	PHOTOLITHOGRAPHY A
24-	3	ASHING A	78	11	INSPECTION B	132	18	INSPECTION B
25	3	PEELING A	79	12	CLEANING A	133	18	INSPECTION C
26	3	INSPECTION B	80	12	CVD-D	134	18	DRY ETCHING D
27	4	CLEANING A	81	12	ANNEALING D	135	18	. PEELING B
28	4	THERMAL OXIDATION A	82	12	CLEANING A	136	18	INSPECTION B
29	4	INSPECTION A	83	12	PHOTOLITHOGRAPHY A	137	19	CVD-E
30	5	CVD-C	84	12	INSPECTION B	138	19	CLEANING B
31	5	ANNEALING C	85	12	INSPECTION C	139	19	ANNEALING E
32	5	PHOTOLITHOGRAPHY A	86	12	DRY ETCHING B	140	19	CLEANING A
33	5	INSPECTION C	87	12	ASHING A	141	19	PHOTOLITHOGRAPHY A
34	5	ION IMPLANTATION A	88	12	PEELING A	142	19	INSPECTION B
35	5	ASHING A	89	12	INSPECTION B	143	19	INSPECTION C
36	5	PEELING A	90	13	CLEANING A	144	19	DRY ETCHING C
37	6	PHOTOLITHOGRAPHY A	91	13	CVD-C	145	19	WET ETCHING A
38	6	INSPECTION C	92	13	PHOTOLITHOGRAPHY A	146	19	ASHING A
39	6	ION IMPLANTATION A	93	13	INSPECTION B	147	19	PEELING A
40	6	ASHING A	94	13	INSPECTION C	148	19	INSPECTION B
41	7	CLEANING A	95	13	DRY ETCHING C	149	20	SPUTTERING C
42	7	CVD-D	96	13	ASHING A	150	20	CLEANING B
43	7	ANNEALING D	97	13	PEELING A	151	20	PHOTOLITHOGRAPHY A
44	7	CLEANING A	98	13	INSPECTION B	152	20	INSPECTION B
45	7	PHOTOLITHOGRAPHY A	99	14	CVD-D	153	20	INSPECTION C
46	7	INSPECTION B	100	14	ANNEALING D	154	20	DRY ETCHING E
47	7	INSPECTION C	101	14	CLEANING A	155	20	ASHING A
48	7	DRY ETCHING B	102	15	SPUTTERING A	156	20	PEELING B
49	7	ASHING A	103	15	CLEANING B	157	20	INSPECTION B
50	7	PEELING A	104	15	PHOTOLITHOGRAPHY A		21	PHOTOLITHOGRAPHY A
51	7	INSPECTION B	105	15	INSPECTION B	159	21	INSPECTION C
52	8	PHOTOLITHOGRAPHY A	106	15	INSPECTION C	160	21	WET ETCHING A
53	8	INSPECTION C	107	15	DRY ETCHING A	161	21	ASHING A
54	8	ION IMPLANTATION A	108	15	ASHING A	162	21	PEELING B

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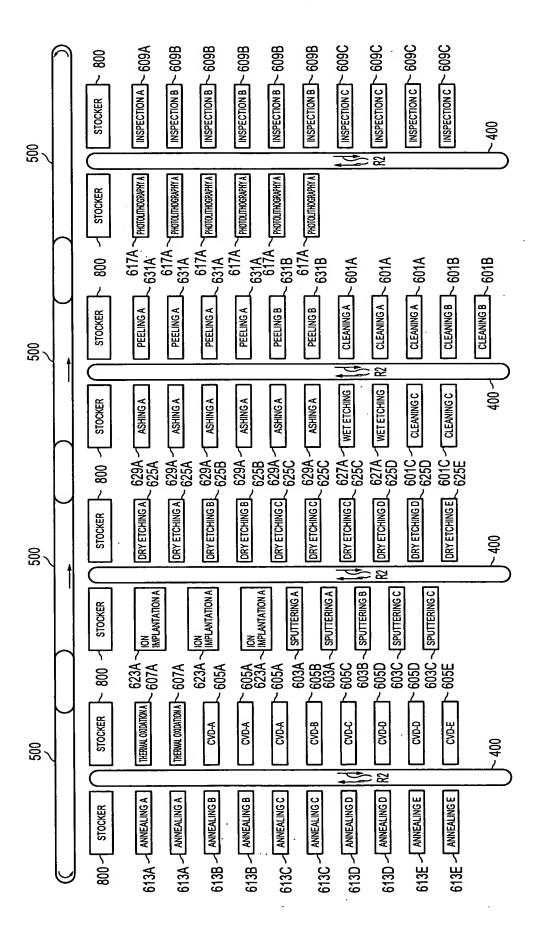


FIG. 14

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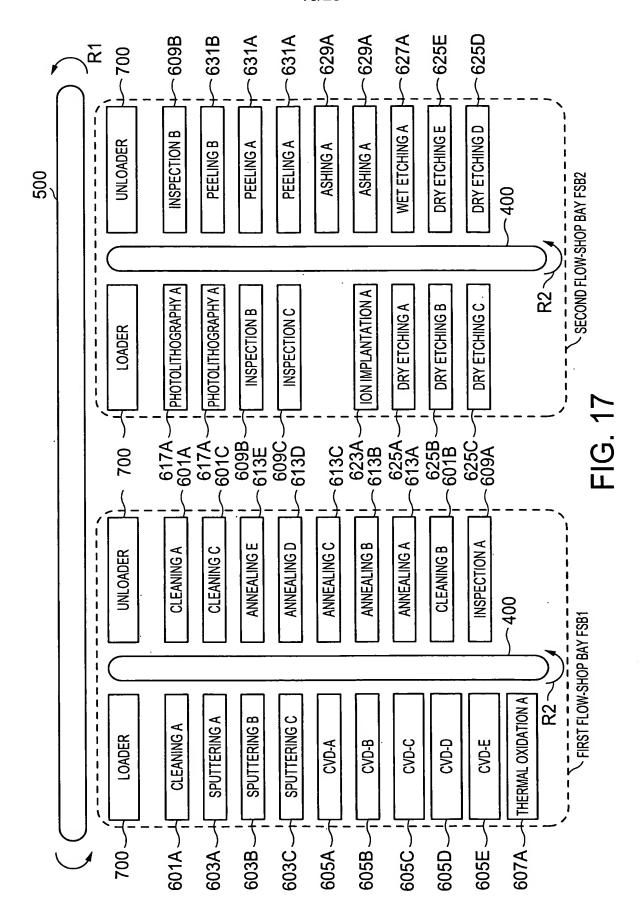
APPARATUS	NUMBER OF A	PPARATUSES
AFFARATUS	2,500 SHEETS/MONTH	10,000 SHEETS/MONTH
CVD-A	1	3
CVD-B	1	1
CVD-C	1	1
CVD-D	1	2
CVD-E	1	1
ASHING A	2	6
ANNEALING A	1	2
ANNEALING B	1	2
ANNEALING C	1	2
ANNEALING D	1	2
ANNEALING E	1	3
ION IMPLANTATION A	1	3
WET ETCHING A	1	. 2
INSPECTION A	1	1
INSPECTION B	2	5
INSPECTION C	1	4
SPUTTERING A	1	2
SPUTTERING B	1	1
SPUTTERING C	1	2
CLEANING A	1	3
CLEANING B	1	2
CLEANING C	1	2
DRY ETCHING A	1	2
DRY ETCHING B	1	2
DRY ETCHING C	1	3
DRY ETCHING D	1	2
DRY ETCHING E	1	1
THERMAL OXIDATION A	1	2
PEELING A	1	4
PEELING B	1	2
PHOTOLITHOGRAPHY A	2	6
TOTAL	34	76

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	G INSPECTION SSI PROCESS			G INSPECTION B		9		3 INSPECTION B	9		S	3 INSPECTION B		3 INSPECTION B		3 INSPECTION B	3 INSPECTION B	3 INSPECTION B	3 INSPECTION B	3 INSPECTION B	3 INSPECTION B	PEELING INSPECTION B B
	PEELIN	PEELIN(PEELING		PEELING			PEELING A	PEELING A	PEELING A	PEELING	PEELING A	PEELING A		PEELING A	PEELING A	PEELING A	PEELING	PEELING A	PEELING B	
	ASHING PEELING PROCESS	ASHING A		ASHING A		ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A		ASHING A	ASHING A	ASHING A		ASHING A	ASHING A	ASHING A
	ETCHING PROCESS											WET ASHING A					WET ETCHING A	WET ASHING A		WET ETCHING A		WET ASHING A
OP FS2	ည္က	DRY ETCHING A		DRY ETCHING B				DRY ETCHING B				DRY ETCHING C	DRY ETCHING B	DRY ETCHING C		DRY ETCHING A	DRY ETCHING C	DRY ETCHING C	DRY ETCHING D	DRY WET ASHING A	DRY ETCHING E	
SECOND FLOW-SHOP FS2	ION IMPLANTATION PROCESS					ION IMPLANTATION A	ION IMPLANTATION A		INSPECTION ION IMPLANTATION C	INSPECTION ION IMPLANTATION C	INSPECTION ION IMPLANTATION C		•									
	INSPECTION PROCESS	INSPECTION C		INSPECTION C		INSPECTION C		INSPECTION	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION	INSPECTION C	INSPECTION C		INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C
	INSPECTION INSPECTION PROCESS	INSPECTION INSPECTION B		INSPECTION I				INSPECTION B	_		INSPECTION I	INSPECTION I	INSPECTION INSPECTION B C	INSPECTION INSPECTION B		INSPECTION I	INSPECTION I	INSPECTION INSPECTION B C	INSPECTION INSPECTION B C	INSPECTION INSPECTION B C	INSPECTION INSPECTION B C	
	PHOTOLITHOGRAPHY PROCESS	РНОТОЦІТНО ВВАРНУ А		CLEANING PHOTOLITHOGRAPHY INSPECTION INSPECTION C		РНОТОLITHOGRAPHY A	РНОТОLITHOGRAPHY A	CLEANING PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY A	РНОТОLІТНОGRAРНҮ А	PHOTOLITHOGRAPHY INSPECTION A B	РНОТОLІТНОGRAРНҮ А	CLEANING PHOTOLITHOGRAPHY A	РНОТОLІТНОGRAРНҮ А		PHOTOLITHOGRAPHY INSPECTION INSPECTION C	PHOTOLITHOGRAPHY INSPECTION INSPECTION A B C	PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY A	CLEANING PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY A	РНОТОЦІТНОGRAРНУ А
E	CLEANING		CLEANING	CLEANING			_	CLEANING					CLEANING		CLEANING A					CLEANING		
SHEETS/MON	ANNEALING		EANING ANNEALING CLEANING B C	ANNEALING		ANNEALING		ANNEALING					ANNEALING D		ANNEALING		ANNEALING A			EANING ANNEALING		
TION (2,500 HOP FS1	CLEANING	CLEANING	CLEANING	CLEANING A		7-										CLEANING				CLEANING	CLEANING	
SS CONSTRUCTIO	INSPECTION		INSPECTION CL		INSPECTION A							INSPECTION A										
FLOW-SHOP PROCESS CONSTRUCTION (2,500 SHEETS/MONTH) FIRST FLOW-SHOP FS1	FILM FORMING PROCESS	SPUTTERING	CVD-A	CVD-8	THERMAL OXIDATION A	cvo-c		CVD-D				CVD-A	CVD-D	cvp-c	CVD-D	SPUTTERING A	CVD-E		SPUTTERING B	CVD-E	SPUTTERING	
FLO	CLEANING	CLEANING			CLEANING A			CLEANING A				CLEANING	CLEANING	CLEANING			CLEANING					
_	LAYER	_	2	6	4	5	ဖ	^	-	6	2	=	12	5	4	15	9	17	55	₽	8	21

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FIRST FLOW-SHOP FS1

(A)	APPARATUS	NUMBER OF APPARATUSES
	CVD-A	1
	CVD-B	1
	CVD-C	1
	CVD-D	1
	CVD-E	1
	ANNEALING A	1
•	ANNEALING B	1
	ANNEALING C	1
	ANNEALING D	1
-	ANNEALING E	1
	INSPECTION A	1
	SPUTTERING A	1
	SPUTTERING B	1
	SPUTTERING C	1
	CLEANING A	2
	CLEANING B	1
•	CLEANING C	1
	THERMAL OXIDATION A	1
	TOTAL	19

SECOND FLOW-SHOP FS2

(B)	APPARATUS	NUMBER OF APPARATUSES
	ASHING A	2
•	ION IMPLANTATION A	1
	WET ETCHING A	1
	INSPECTION B	. 2
	INSPECTION C	1
	DRY ETCHING A	1
	DRY ETCHING B	1
	DRY ETCHING C	1
	DRY ETCHING D	1
	DRY ETCHING E	1
	PEELING A	1
	PEELING B	1
	PHOTOLITHOGRAPHY A	2
	TOTAL	16

FIG. 18

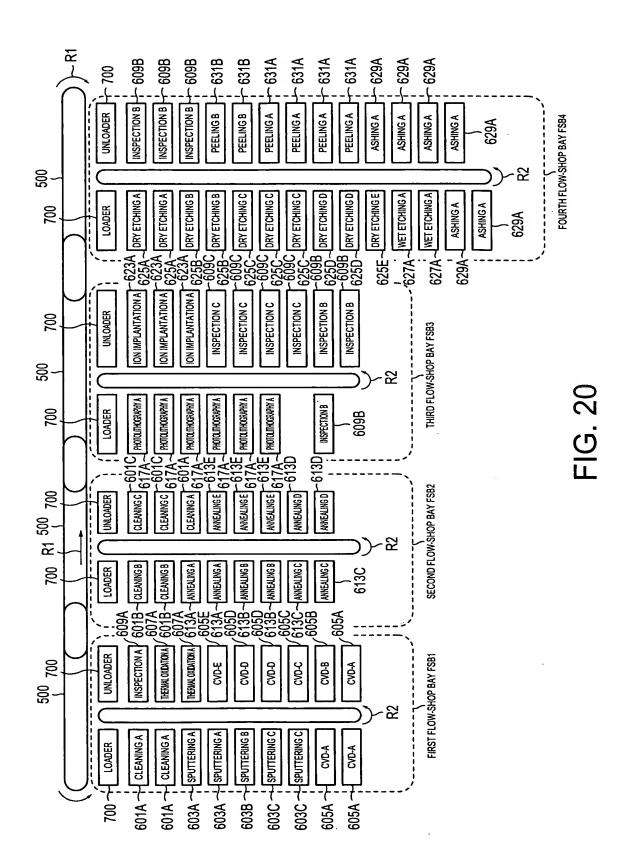
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	INSPECTION S PROCESS	INSPECTION B		INSPECTION B				INSPECTION B		3		INSPECTION B	INSPECTION B	INSPECTION B		PEELING INSPECTION A B	INSPECTION B	INSPECTION B	PEELING INSPECTION B	INSPECTION B	INSPECTION B	INSPECTION B
OP FS4	PEELING	PEELING A		PEELING		PEELING A		PEELING	PEELING	PEELING	PEELING A	PEELING A	PEELING A	PEELING			PEELING	PEELING A		PEELING A	PEELING B	PEELING
FOURTH FLOW-SHOP FS4	ASHING PEELING PROCESS	ASHING A		ASHING A	•	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A	ASHING A		ASHING A	ASHING A	ASHING A		ASHING A	ASHING A	ASHING A
FOURT	ETCHING PROCESS											WET ASHING A					WET ETCHING A	WET ASHING A		DRY WET ASHING A		WET ASHING A
	ETCHING PROCESS	DRY ETCHING A		DRY ETCHING B				DRY ETCHING B				DRY ETCHING C	DRY ETCHING B	DRY ETCHING C		DRY ETCHING A	DRY ETCHING C	DRY ETCHING C	DRY ETCHING D	DRY ETCHING C	DRY ETCHING E	
	INSPECTION INSPECTION ION IMPLANTATION PROCESS PROCESS					ION IMPLANTATION A	INSPECTION ION IMPLANTATION C		INSPECTION ION IMPLANTATION C	INSPECTION ION IMPLANTATION C	ION IMPLANTATION A											
SHOP FS3	INSPECTION PROCESS	INSPECTION C		INSPECTION C		INSPECTION C	INSPECTION C	INSPECTION	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION		INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C	INSPECTION C
THIRD FLOW-SHOP FS3	INSPECTION PROCESS	INSPECTION INSPECTION B C		INSPECTION B			•	INSPECTION INSPECTION B C			INSPECTION B	INSPECTION INSPECTION B	INSPECTION B	INSPECTION INSPECTION B C		INSPECTION B	INSPECTION B	INSPECTION INSPECTION B C	INSPECTION INSPECTION B	INSPECTION INSPECTION B C	INSPECTION INSPECTION B C	
	PHOTOLITHOGRAPHY PROCESS	PHOTOLITHOGRAPHY A		CLEANING PHOTOLITHOGRAPHY INSPECTION INSPECTION		РНОТОЦІТНОЄВАРНУ А	PHOTOLITHOGRAPHY A	CLEANING PHOTOLITHOGRAPHY	PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY INSPECTION INSPECTION ION IMPLANTATION A B C C	РНОТОLІТНОGRAРНҮ А	CLEANING PHOTOLITHOGRAPHY INSPECTION INSPECTION C	РНОТОЦІТНОВВАРНУ А		PHOTOLITHOGRAPHY INSPECTION INSPECTION A B C	PHOTOLITHOGRAPHY INSPECTION INSPECTION A B C	PHOTOLITHOGRAPHY A	РНОТОЦІТНО ВВАРНУ А	CLEANING PHOTOLITHOGRAPHY A	PHOTOLITHOGRAPHY A	РНОТОШТНОGRAРНУ А
NTH) OP FS2	CLEANING														CLEANING							
(10,000 SHEETS/MONTH) SECOND FLOW-SHOP FS2	CLEANING ANNEALING CLEANING PROCESS		EANING ANNEALING B A	EANING ANNEALING B B		ANNEALING C		ANNEALING D					ANNEALING D		ANNEALING		ANNEALING A			EANING ANNEALING B		
TION (10,000			CLEANING B	CLEANING B												CLEANING				CLEANING	CLEANING	
S CONSTRUC	INSPECTION PROCESS		INSPECTION CL A		INSPECTION A							INSPECTION										
FLOW-SHOP PROCESS CONSTRUCTION (10,000 SHEETSIMONTH) FIRST FLOW-SHOP FS1 SECOND FLOW-SHOP FS	CLEANING FILM FORMING INSPECTION PROCESS	SPUTTERING A	CVD-A	CVD-B	THERMAL OXIDATION A	cvp-c		CVD-D				CVD-A	CVD-D	CVD-C	CVD-D	SPUTTERING A	CVD-E		SPUTTERING	CVD-E	SPUTTERING C	
9 E	CLEANING	CLEANING A			CLEANING A			CLEANING				CLEANING	CLEANING	CLEANING			CLEANING					
	LAYER	-	2	က	4	ς.	9	7	œ	6	9	=	12	5	‡	15	91	17	18	6	8	21

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Inventors: Shuji TANAKA et al. Atty. Ref.: 9319S-000711

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OW-SHOP	NUMBER OF APPARATUSES	2	2	3	2	-	2	9	4	2	3	27						
FOURTH FLOW-SHOP	APPARATUS	DRY ETCHING A	DRY ETCHING B	DRY ETCHING C	DRY ETCHING D	DRY ETCHING E	WET ETCHING A	ASHING A	PEELING A	PEELING B	INSPECTION B	TOTAL		•	(D)			
V-SHOP	NUMBER OF APPARATUSES	9	3	4	3	16												
THIRD FLOW-SHOP	APPARATUS	PHOTOLITHOGRAPHY A	INSPECTION B	INSPECTION C	ION IMPLANTATION A	TOTAL									(C)	•		70 011
SECOND FLOW-SHOP	NUMBER OF APPARATUSES	2	2	2	2	က	1	2	2	16					(B)			
SECOND F	APPARATUS	ANNEALING A	ANNEALING B	ANNEALING C	ANNEALING D	ANNEALING E	CLEANING A	CLEANING B	CLEANING C	TOTAL					3	•		
НОР	NUMBER OF APPARATUSES	3	-	-	2	-	2	-	2	-	2	2	7	18				
FIRST FLOW-SHOP	APPARATUS	CVD-A	CVD-B	CVD-C	CVD-D	CVD-E	THERMAL OXIDATION A	INSPECTION A	SPUTTERING A	SPUTTERING B	SPUTTERING C	CI EANING A	OLLAINING A	TOTAL	(X			

COMPLETION INSPECTION B FOR TWENT-FRISTLAYER ASHING A FOR TWENT-FRISTLAYER WET ETCHING A FOR TWENT-FRISTLAYER WET ETCHING A FOR TWENT-FRISTLAYER INSPECTION C FOR TWENT-FRISTLAYER FOR TWENT-FRISTLAYER FOR TWENT-FRISTLAYER ASHING A FOR TWENT-FRISTLAYER FOR TWENT-FRISTLAYER ASHING A FOR TWENT-FINATER GO 9 INSPECTION C FOR TWENT-FINATER ASHING A FOR TWENT-FINATER GO 9 INSPECTION C FOR TWENT-FINATER
FOR NINETERMHUAYER INSPECTION B 609C FOR NINETERMHUAYER INSPECTION C 625C FOR NINETERMHUAYER WET ETCHING A 627A FOR NINETERMHUAYER WET ETCHING A 629A FOR NINETERMHUAYER RELING A 631A FOR NINETERMHUAYER RELING A 609B FOR NINETERMHUAYER CLEANING B 603C FOR NINETHHUAYER CLEANING B 601B FOR NIVETHHUAYER CLEANING B 601B FOR TWENTETH LAYER RECTION B FOR TWENTETH LAYER RECTION B FOR TWENTETH LAYER FOR THE FOR
-609C 625B ORY ETCHING B OR THIRD LAYER COST HIRD LAYER COST OR THIRD LAYER CONDITION A FOR FOURTH LAYER CONDITION A FOR FOURTH LAYER COST OF FOR FOR FIFTH LAYER COST OF FOR FIFTH LAYER FOR FIFTH
INSPECTION C FOR THIRD LAYER FOR THIRD LAYER FOR THIRD LAYER CLEANING C FOR THIRD LAYER CLEANING B FOR THIRD LAYER CVD-B FOR THIRD LAYER FOR THIRD LAYER CVD-B FOR THIRD LAYER FOR THIRD LAYER CLEANING B FOR THIRD LAYER FOR SECOND LAYER CLEANING B FOR SECOND LAYER FOR SECOND LAYE
TRANSFER COTA FOR FIRST LAYER CLEANING A FOR FIRST LAYER CLEANING B FOR FIRST LAYER FOR FOUTHERING A FOR FIRST LAYER INSPECTION B FOR FIRST LAYER INSPECTION C FOR FIRST LAYER INSPECTION C FOR FIRST LAYER ASHING A FOR FIRST LAYER PEELING A FOR FIRST LAYER FOR FIRST LAYER PEELING A FOR FIRST LAYER PEELING A FOR FIRST LAYER PEELING A FOR FIRST LAYER PEELING B FOR FIRST LAYER FOR SCOND LAYER

COMPLETE FLOW-SHOP LAYOUT

APPARATUS	NUMBER OF A	PPARATUSES
APPARATUS	2,500 SHEETS/MONTH	10,000 SHEETS/MONTH
CVD-A	2	3
CVD-B	1	. 1
CVD-C	2	2
CVD-D	3	3
CVD-E	2	2
ASHING A	17	17
ANNEALING A	2	2
ANNEALING B	1	2
ANNEALING C	1	2
ANNEALING D	3	3
ANNEALING E	1	3
ION IMPLANTATION A	5	5
WET ETCHING A	5	5
INSPECTION A	3	3
INSPECTION B	26	26
INSPECTION C	18	18
SPUTTERING A	2	2
SPUTTERING B	1	1
SPUTTERING C	1	. 2
CLEANING A	11	11
CLEANING B	6	6
CLEANING C	2	2
DRY ETCHING A	2	2
DRY ETCHING B	3	3
DRY ETCHING C	5	5
DRY ETCHING D	1	2
DRY ETCHING E	1	1
THERMAL OXIDATION A	1	2
PEELING A	14	14
PEELING B	3	3
PHOTOLITHOGRAPHY A	18	18
TOTAL	163	171

Title: MANUFACTURING APPARATUS, AND MANUFACTURING METHOD Inventors: Shuji TANAKA et al.
Atty. Ref.: 9319S-000711

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	SMALL-SCALE	AMOUNT OF PRODI	ICTION (ABOUT 2.500 SHEETS/MONTH)	MIDDLE-SCALE	AMOUNT OF PRODU	MIDDLE-SCALE AMOUNT OF PRODUCTION (ABOUT 10,000 SHEETS/MONTH)
APPARATUS	JOB-SHOP	COMPLETE FLOW-SHOP	SHOP COMPLETE FLOW-SHOP ACCORDING TO FLOW-SHOP THE PRESENT EMBODIMENT	JOB-SHOP	COMPLETE FLOW-SHOP	FLOW-SHOP ACCORDING TO THE PRESENT EMBODIMENT
CVD-A	-	2	1	3	3	3
CVD-B	_	1	ı	1	1	
CVD-C	•	2	1	1	2	
CVD-D	-	3	Į.	2	3	2
CVD-E	_	2	Į.	1	2	1
ASHING A	2	17	2	9	17	9
ANNEALING A	-	7	l	2	2	2
ANNEALING B	-	l	ļ	2	2	2
ANNEALING C	1.	1	l l	2	2	2
ANNEALING D	-	3	Į.	2	3	2
ANNEALING E	-			3	3	3
ION IMPLANTATION A	-	5	l	3	5	3
WET ETCHING A	-	9	Į.	2	. 5	2
INSPECTION A	-	3	1	1	3	1
INSPECTION B	2	56	2	5	26	9
INSPECTION C	-	18	l l	4	18	4
SPUTTERING A	-	2	1	2	2	2
SPUTTERING B	-	ļ	ļ	1	1	
SPUTTERING C	-	l l	1	2	2	2
CLEANING A	-	11	2	3 ·	11	3
CLEANING B	1	9	1	2	9	2
CLEANING C	1.	2	1	2	2	2
DRY ETCHING A	1	2	1	2	2	2
DRY ETCHING B		3	1	2	3	2
DRY ETCHING C	. 1	9	1	3	2	3
DRY ETCHING D	-	1		2	2	2
DRY ETCHING E	1	1	ı	1	-	
THERMAL OXIDATION A	1	1	1	2	2	2
PEELING A	1	14		4	14	4
PEELING B	1	3	1	2	3	2
PHOTOLITHOGRAPHY A	2	18	2	9	18	9
TOTAL	34	163	35	76	171	77
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FIG. 24